Contents

Preface v
Acknowledgements vi

Long-term synaptic modification by protein kinase C: regulation by activators, inhibitors and NMDA receptors
A. Routtenberg 1

Extreme sensitivity to excitotoxic brain damage in youth and old age
J.W. Olney and C. Ikonomidou 15

Brain reactive processes triggered by permanent ischemic insult
A. Gorio, F. Cattabeni, A.M. Di Giulio and W. Young 29

Excitatory amino acid antagonists as neuroprotective agents
G.N. Woodruff and R. Gill 35

Excitatory amino acid release during *in vitro* and *in vivo* models of ischemia: are free radicals involved?
D.E. Pellegrini-Giampietro, G. Lombardi, G. Cherici, V. Carlá and F. Moroni 45

Enhanced sensitivity of 'metabolotrophic' glutamate receptors after transient global ischemia in rat
F. Nicoletti, M.S. Seren, C. Aldinio, R. Zanoni and A. Leon 57

Heterogenous distribution of excitatory amino acid receptor subtypes on rat spinal cord neurons in culture
O. Arancio and A.B. MacDermott 67

Treatment of brain ischemia: from preclinical pharmacology to clinical practice
R.P. Simon 79

Natural and semisynthetic sphingolipids protect neurons in culture from glutamate-induced toxicity
M. Favaron, H. Manev, A. Guidotti and E. Costa 93

Exogenous GM1 ganglioside facilitates neurotransmitter recovery in the brain of developing rats after hypoxia
M. Hadjiconstantinou, A.J. Yates, H.S. Weiss and N.H. Neff 103

Cerebral ischemia and monosialoganglioside treatment: relationship with anti-neuronotoxic and pro-neuronotrophic effects
M.S. Seren, M. Lipartiti, A. Lazzaro, S. Mazzari, T. Koga, G. Toffano and A. Leon 111

On the physiological role of NGF in CNS
G. Vantini, M. Fusco, N. Schiavo, M.A. Tria, A. Leon and L. Cavicchioli 119

Ischemia in post traumatic coma: implications for therapy
F. Della Corte, C. Anile, R. Proietti, C. Maira and C. Manni 125

Clinical trials in acute ischemic stroke
C. Argentino, D. Toni, M.L. Sacchetti, G. Savoini, M. Rasura and C. Fieschi 137

Subject Index 145